MyNuvara Health

Peptides, Myth vs Fact:

What the research actually says

A short guide from MyNuvara Health

What is a peptide?

A peptide is a short chain of amino acids, the same building blocks that make up proteins. Proteins are long chains. Peptides are short ones, usually a few to a few dozen links long.

Your body makes thousands of them. Some act as signals that pass messages between cells. That's why researchers study them, and why they get so much attention online.

Online, a lot of that attention runs ahead of the evidence. This guide takes the peptides people ask us about most, sets a common myth next to what the research shows, and tells you what kind of study it was. Most of it is early work in animals or in cells in a dish. Large human trials are still missing for every peptide below.

GHK-Cu

Myth: It's just a hype ingredient.

Fact: GHK is three amino acids that hold onto copper. It was first found in human blood. In lab dishes, GHK-Cu increased the collagen that cells made.

Think of it like: A tiny clip that holds one copper ion.

Study type: Cells in a dish. **Large human trials: lacking.**

Source: Maquart et al., FEBS Letters, 1988. PMID 3169264

BPC-157

Myth: It came from the gym world.

Fact: BPC-157 is a 15-amino-acid chain derived from a protein first found in human gastric juice. In a study with rats and cultured tendon cells, the cells grew out and moved faster.

Think of it like: A site foreman calling work crews to a repair zone.

Study type: Rat + cells in a dish. **Large human trials: lacking.**

Source: Chang et al., Journal of Applied Physiology, 2011. PMID 21030672

How to read a peptide study

- Who was studied? Cells in a dish, mice and rats come first. Results there often don't hold up in people.
- How many? A handful of animals or samples is a starting point, not an answer.
- What was measured? A change in a lab marker is not the same as a result a person would notice.
- Has anyone repeated it? One study is one data point.
- What wasn't tested? Most peptide studies don't look at long-term safety in people.

TB-500 (thymosin beta-4 fragment)

Myth: It's a steroid.

Fact: It isn't. TB-500 is a lab-made piece of thymosin beta-4, a protein your cells already make. In a 1999 rat study, wounds given the full thymosin beta-4 protein closed faster. That study used the full protein, not the TB-500 fragment.

Think of it like: A scaffolding crew that helps cells crawl into place.

Study type: Rat. **Large human trials: lacking.**

Source: Malinda et al., Journal of Investigative Dermatology, 1999. PMID 10469335

Semax

Myth: It's a proven smart drug.

Fact: Semax is a short peptide built from a piece of the hormone ACTH. In rats, it raised BDNF, a growth-factor protein, in the hippocampus, a brain area involved in memory.

Think of it like: A delivery truck dropping off fertilizer for brain cells.

Study type: Rat. **Large human trials: lacking.**

Source: Dolotov et al., Brain Research, 2006. PMID 16996037

MOTS-c

Myth: It's a workout pill.

Fact: MOTS-c is a 16-amino-acid peptide encoded in mitochondrial DNA. In a 2015 mouse study, researchers saw changes in how the animals handled glucose.

Think of it like: A thermostat that may signal cells about how fuel gets used.

Study type: Mouse. **Large human trials: lacking.**

Source: Lee et al., Cell Metabolism, 2015. PMID 25738459

Epithalon

Myth: It's a fountain of youth.

Fact: Epithalon is a 4-amino-acid peptide. In one 2003 lab study, it switched on telomerase, an enzyme that works on the caps at the ends of chromosomes, in human cells grown in a dish.

Think of it like: Telomeres are like the plastic tips on shoelaces.

Study type: Human cells in a dish. **Large human trials: lacking.**

Source: Khavinson et al., Bulletin of Experimental Biology and Medicine, 2003. PMID 12937682

NAD+

Myth: NAD+ boosters are proven to work in people.

Fact: NAD+ is a molecule every cell uses to turn food into energy, and enzymes involved in DNA repair use it too (review article). One study of human skin samples found less NAD+ in older skin. It only measured levels. It didn't test raising them.

Think of it like: A rechargeable battery that cells keep cycling.

Study type: Review + human tissue samples (measurement only). **Large human trials: lacking.**

Source: Covarrubias et al., Nature Reviews Molecular Cell Biology, 2021. PMID 33353981; Massudi et al., PLoS One, 2012. PMID 22848760

The bottom line

Peptides are interesting science. For the ones in this guide, the evidence is still early, and none has been tested in large human trials.

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